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Equipment, Drugs and Consumables in the Implementation of NHIS: A Survey of the Federal Capital Territory, Abuja, Nigeria

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ABSTRACT
The National Health Insurance Scheme (NHIS) is an initiative of the federal government of Nigeria to provide accessible and affordable health care services to a significant number of citizens. The scheme was enabled by Decree 35 of 1999 (now NHIS Act 2004), and became operational in 2005. Coming at the onset of the democratization process, the NHIS is the first indication of social inclusion policy consistent with the principle of good governance. However, progress checks in implementation suggest that there is considerable gap between policy objectives and outcomes. In the light of this observation, the paper examines the extent to which medical equipment, supply of drugs and consumables affect the implementation of NHIS in the Federal Capital Territory (FCT), Abuja. The study which is a survey research was anchored on Service Quality Theory and employed the instrument of questionnaire to elicit data from Health workers and NHIS enrollees in nine health institutions spread across four Area Councils in Abuja, namely, AMAC, Gwagwalada, Kuje and Kwali. The data were analyzed using Statistical Package for Social Science (SPSS). The study observed that medical equipment, drugs and consumable are fundamental requirements of public health intervention, and the lack or inadequate supply of these requirements has severely compromised the efficient implementation of NHIS in the FCT. It concludes that state intervention designed to improve access to affordable health care services should be treated as a social welfare programme which often requires massive investment in a variety of medical equipment and consumables. The paper recommends that the NHIS should collaborate with Civil Society Organizations with interest in public health advocacy to ensure that only properly equipped health care providers with the full complement of health care professionals are accredited for its enrollees; and that the Ministry of Health should conduct regular monitoring and evaluation of NHIS health care facilities to ensure that stipulated standards of health care services are maintained.

KEYWORDS: Consumables, Citizens, Drugs, Equipment, Government, Health-Care,

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I. INTRODUCTION

Over the past decades, many Low and Middle-Income Countries (LMCs) such as Nigeria, Sudan, Ghana, Yemen, etc have found it increasingly difficult to sustain sufficient financing for health care, particularly for the poor. As a result, international policy makers and other stakeholders have recommended a range of suitable measures, including conditional cash transfers, cost sharing arrangements and a variety of health insurance schemes. Moving away from out-of-pockets for health care at the time of use to prepayment (health insurance) is an important step towards averting the financial hardship associated with paying for health services particularly for the poor. In 2005, the World Health Organization (WHO) passed a resolution that social health insurance should be supported as one of the strategies used to mobilize more resources for health, for risk pooling, for increasing access to health care for the poor and for delivering quality health care in all its member states and especially in low income countries, a strategy also supported by the World Bank (Hsiao, 2007). These are the ideals upon which the National Health Insurance Scheme (NHIS) was conceived and established in Nigeria.

The National Health Insurance Scheme (NHIS) is an offshoot of the Nigerian National Health Policy (NHP) and it was established by Decree 35 of 1999 (Now NHIS Act 2004) and became operational in 2005. It is a social health insurance programme designed by the Federal Government of Nigeria to complement sources of financing for the health sector and to improve access to health care for the majority of Nigerians (Mbaya, 2009). It guarantees the provision of needed health services to persons without them having to pay fully at the time of need, because payment has previously been made by regular contribution by the insured or his employer or both. The scheme is statutorily mandated to ensure that Nigerians have access to affordable health care regardless of their social status. The intervention of the scheme is designed to cover the formal sector (Public Sector: Federal, State and Local Government; organized private sector, Armed forces, police and other uniformed services); the

informal sector (Community Based Social Health Insurance Programmes, Voluntary Contributors, Social Health Insurance Programme for the Vulnerable Group, Social Health Insurance Programme for physically challenged persons, prisons inmates, under five children, refugees, victims of human trafficking, internally displaced persons and pregnant women) (NHIS, 2013).

The NHIS has existed for well over a decade and opinion is polarized among its clients as to whether the scheme has the capacity to guarantee universal coverage and access to adequate, efficient and affordable health care for millions of Nigerians due to a number of problems associated with implementation of the Scheme. Such problems include lack of standardized medical equipment in accredited hospitals, shortage of essential drugs and consumables in NHIS pharmacies; and huge medical bills resulting from Out-of-pocket expenses by enrollees. The question of the level of satisfaction derived by NHIS enrollees has become a vexed issue. Citizens' satisfaction is inevitably linked to availability of the enabling institutional environment for efficient service delivery. These issues necessitated this study to investigate the extent to which the problem of inadequate equipment, lack of drugs and consumables affect the efficient implementation of NHIS in FCT. The study covered the period of 2005 to 2015.

Objectives of the Study

The aim of this study is to achieve the following objectives:

(i) To investigate the extent to which lack of standard medical equipment, drugs and consumables in accredited hospitals constrain effective administration of healthcare service to NHIS enrollees in FCT.

(ii) To determine whether huge medical bills resulting from out-of-pocket expenses by enrollees of NHIS in the FCT has significantly reduced their access to affordable healthcare service.

Statement of the Problem

Healthcare system in Nigeria is fragile as proved by lack of coordination, fragmentation of services, dearth of resources together with drug and supplies, inadequate and decaying infrastructure, difference in resource distribution, access to health care extremely deplorable quality of care (Meninabaya, 2011). In 2016, the World Health Organization (WHO) graded Nigeria as having the world's fifth worst health supply system, after fragile States like Sierra Leone, Myanmar, Central African Republic and also the Democratic Republic of Congo (Punch, 2020). The country had the eight percent mortality rate and a maternal mortality of 814 deaths per 100,000 live births, with one lady dying in child birth in each ten minutes. Protozoa infection kills over 300,000 persons every year; cerebrospinal fever, polio, infectious disease, hemorrhagic fever, HIV/AIDS and cholera are endemic (World Health Organization, 2016).

This lackluster performance of the health sector informed the decision of the then federal military government in 1999 to establish the National Health Insurance Scheme (NHIS) via Decree Number 35 (NHIS Decree No.35 of 1999; Now NHIS Act 2004). The scheme was subsequently launched and became operational in 2005 and has as its fundamental objective, the achievement of efficient, accessible, affordable and Universal Health Coverage (UHC) for Nigerians by the year 2015 (NHIS, 2012). Five years after this target date, Nigerians still grapple with the problem of accessing affordable healthcare. The question then arises; what are the challenges that have held down the NHIS from giving a good account of itself after over a decade of its existence? Are these challenges the consequence of more fundamental and general problems facing the Nigerian health sector and not particularly rooted in the NHIS alone? Some scholars have tended to generalize these challenges to the entire health sector regardless of which sub-sector is being investigated. For example, some scholars have identified the problems of shortage of health personnel, inadequate medical equipment, lack of drugs and consumables, poor health infrastructure, paucity of funds and hospital bureaucracy as major challenges confronting the entire health sector regardless of the uniqueness of some sub-sectors such as the NHIS (Yohessor, 2004; Jegede, 2014; and Adekola, 2015). These issues necessitated this study to investigate the extent to which the problem of inadequate equipment, lack of drugs and consumables affect the efficient implementation of NHIS in FCT.

Theoretical Framework

Among the various quality measurement techniques, Service Quality (SERVQUAL) model designed by Parasuraman, Zeithaml and Berry (1985) is considered one of the most suitable and appropriate method to analyze service quality. It is a gap between customer's expectations and perceptions. It is observed that the lesser the gap between expectations and perceptions, the more the customer is satisfied with the services. Protagonists of this model (Semnani, Far, Shalipoor, and Mohseni (2015) initially considered 10 dimensions which were later reduced to five, which according to them form the bases upon which expectations of patients in hospitals can be measured. The five main dimensions are: Tangibility, which involves display of hospital facilities, drugs, equipment, consumables and personnel; Reliability, which represents the capability of hospitals to execute the promised service accurately; Responsiveness, that concerns willingness of the staff in providing

instantaneous service to its patients; Assurance, which means exhibiting expertise and kindness of employees to instill confidence and trust among patients; and Empathy, which entails ability to provide individual attention to its patients (Madhura and Lakshmi, 2018).

In spite of the controversies associated with the reliability and validity of SERVQUAL, its application is instructive in the healthcare sector (Newman, 2001). SERVQUAL dimensions are modified accordingly by various researchers in order to meet the objectives of their respective studies. Dimensions like accessibility/affordability, caring and outcomes were later included by various researchers.

Hittman (1993), suggest that the SERVQUAL model would seem natural to use as it not only evaluates the welfare component of a tertiary health institution but also includes aspect of the total service environment as experienced by the enrollees. However, despite the use of SERVQUAL model by service companies, it has its limits. Lovelock Patterson and Walker (2007) argued that the majority of the researchers using SERVQAUL have omitted from, added to, or altered the statements purporting to measure service quality. Solitars (1996) indicates that there would appear to be merit in appraising the performance of tertiary health institutions with a service measuring instrument such as SERVQAUL model.

After taking into account, the validity of using SERVQUAL model in evaluating the quality of health services, the study found this model relevant in assessing the perception of stakeholders in the provision of drugs, equipment and other consumables in Hospitals in Abuja under the NHIS Scheme. Firstly, the model assumes that "tangibility" of hospital facilities is a precondition for ensuring good quality of service, therefore, medical equipment, drugs and consumables necessary for achieving the lofty goals of the health insurance policy should not only be available but also displayed for beneficiaries to behold and access. Secondly, these equipment, drugs and consumables must not only be seen but also functionally "reliable". This means that the display is not symbolic but materially useful for the purpose of the policy. Thirdly, in places where these vital products are available, there should be responsiveness in the handling of health emergencies by healthcare providers. Since the equipment, drugs and consumables are for efficient implementation of the NHIS scheme; these products alone cannot help achieve the goals of the scheme without the responsive services required of the healthcare providers. Fourthly, there should be assurance in the products and service provided under the healthcare insurance scheme in order to maintain a high level of quality service delivery. Finally, there should be empathy in the handling of beneficiaries of the scheme. Admittedly, there is already financial empathy; this measure is also expected in the manner the beneficiaries are treated within the facilities of healthcare providers.

NHIS: Objectives, Coverage and Benefits

Pre-payment method for health care financing have been adopted as the most certain strategy to ensure universal coverage for health (Chuma, Mulupi; and McIntyre, 2013); WHO, 2010). Most countries in the developed world have a prepayment scheme for health (Evans, 2002; Mossialos and Dixon, 2002a) that have been existing for a considerable period of time. However, majority of the people in the developing countries especially in Africa pay for healthcare through the out-of-pocket method. This exacerbates the high burden of chronic illnesses, disabilities and mortality which cumulates in sub-optimal productivity, low life expectancy and poor development compared with the developed world (Murray and Lopez, 2013, Murray, Vos, Lozano, Naghavi, Flaxman, Michaud, Ezzati, Shibuya, Salomon; and Abdalla, (2013). In the wake of democratization of governance in many countries in Africa, prepayment methods to finance health care services have been identified as a viable option for social intervention in the sector.

In Nigeria, the National Health Insurance Scheme (NHIS) was established in 2005 with the aim of 'securing universal coverage and access to adequate and affordable healthcare in order to improve the health status of Nigerians, especially for those participating in the various programmes/products of the Scheme' (NHIS, 2015). However, efforts of the agency to implement a prepayment scheme have mainly been among the formal sector workers, with coverage of about 4% of the general population (NHIS 2015; Onoka, Onwujekwe, Uzochukwu; and Ezumah, 2013). This scenario is majorly attributed, to the fact that enrolment into the health insurance scheme in Nigeria is presently voluntary unlike in neighbouring Ghana where it is mandatory and thus with a better coverage in the latter (Odeyemi and Nixon, 2013). The major stakeholders in the health insurance industry in Nigeria are the state actors such as the federal government through the National Health Insurance Scheme, (NHIS), the States and the local governments, as well as the non-state actors such as the Health Maintenance Organizations (HMOs), health services providers (public and private), pharmaceutical industries, the Nigerian Medical Association (NMA) and the citizens who are the potential beneficiaries.

The NHIS was established to (i) ensure the provision of health insurance which shall entitle ensured persons and their dependents the benefit of prescribed good quality and cost effective health services. (ii) ensure universal provision of health care in Nigeria; (iii) ensure that every Nigerian has access to good health care services; (iv) protect families from the financial hardship of huge medical bills; (v) limit the rise in the cost of health care services, (vi) ensure equitable distribution of the health care cost among different income groups; (vii) maintain high standard of health care delivery services within the scheme; (viii) ensure efficiency in health

care services; (ix) improve and harness private sector participation in the provision of health care services; (x) ensure adequate distribution of health facilities within the federation; (xi) ensure equitable patronage of all levels of health care; (xii) ensure the availability of funds to the health sector for improved services (NHIS Act, 2004).

In the area of coverage, the scheme is designed to cover the major beneficiary known as the principal, his spouse and four children who are not more than 18 years of age (NHIS, 2009, 2010, 2012 and 2013). The principal or enrollee (employee) is expected to contribute 5% of his basic salary and another 10% paid by the employer which is then pooled together and used for all enrollees (Onyedibe, Goyit and Nnadi, 2012).

The benefits of the scheme include outpatient care (including consumables, Routine immunization, surgical procedures, internal medicine, HIV/AIDS: Management of opportunistic infection), health education to prevent and control health problem, Sexually Transmitted Infections (STIs), mental health, family planning education and ophthalmology. Others are pharmaceutical care as contained in NHIS essential drug list (however the beneficiary is expected to make a co-payment of 10% of the total cost of drugs), diagnostic test as contained in NHIS diagnostic test list, maternal care for up to four (4) life birth; preventive care (immunization, health education, antenatal and postnatal care), hospital care and preventive dental care (Obadofin, 2006; NHIS, 2013). Health care services that cannot be handled at the primary health facilities are transferred through referral to secondary or tertiary health facilities. The approval for referral is usually given by the Health Maintenance Organization (HMOs) (NHIS Operational Guidelines, 2012).

The NHIS package also has certain health care services that are not covered by the scheme. These exclusions are either total or partial. Total exclusions include health care services such as occupational or industrial injuries, natural disasters e.g. earthquakes, landslide, conflicts, social unrest, riots and wars. Similarly, injuries arising from extreme sports such as car racing, polo, boxing and wrestling are also not covered by the NHIS; epidemics and therapies accruing from drug abuse and addiction; family planning commodities (e.g. condoms); terminal illnesses, including cancers; periodic medical check-ups unrelated to illness; transplant and cosmetic surgeries; open heart surgery; neurosurgery; provision of contact lens and spectacles; provision of hearing aids and associated appliances; management of cerebra vascular accident (strokes) beyond the initial treatment; treatment of tuberculosis and leprosy; congenital abnormalities involving major/extensive surgical repairs (e.g. separation of Siamese twins); chronic congenital defects (e.g. infertility management, denture, crowns, bridges implants, scaling and polishing and root canal treatment). The following is partially excluded from the list that itemizes health care entitlements: Screening e.g. pap smears and mammogram (20%.20%) coinsurance by the employees or employer and the HMO. (Obadofin 2006; NHIS 2009; 2010; 2013).

Methodology of Study

This study made used of Survey research design and documentary source to determine the extent to which availability and adequacy of equipment, drugs and consumables influence the implementation of NHIS in FCT. Documentary source consist secondary data generated through review of literature to the implementation of NHIS in the form of published books, peer-review journals, conference papers, Enrollees Registers and NHIS Annual Reports. The use of documentary source in this study is justified because; the documents are not produced for the benefit of the research only and as such are free from any theoretical and personal bias. Furthermore, the review of related literature provided insight into the research problem and established the gap in knowledge that this study try to fill. Similarly, survey design is considered appropriate for this study because, surveys allow a researcher to reach thousands of possible participants if necessary, which ensures a more accurate sample in which to draw conclusions. Therefore, the use of survey in this study assisted the researchers to generate first hand information from enrollees of NHIS; NHIS staff; and health workers across health facilities on the implementation of National Health Insurance Scheme (NHIS) in FCT. Questinnarie was the major instrument used to generate primary data. The questionnaire was modeled on Rensis Likert Scale of five-point rating. This is consistent with the objective of the research which consist variables that relate with attitudes, beliefs and behaviours. The scale provides five options: Very High Extent (VHE), High Extent (HE), Undecided (U), Low Extent (LE) and Very Low Extent (VLE). The numerical values assigned to the rating are as follows: Very High Extent (VHE) 5, High Extent (HE) 4, Undecided (U)3, Low Extent (LE)2, and Very Low Extent (VLE)1. The decision rule guiding this Likert scale is given as;

$$\overline{X} = \frac{5+4+3+2+1}{5} = \frac{15}{5} = 3.0$$

Where $\overline{X}$ is the average and the Likert 5 – scale average for decision making = 3.0. The decision rule is given as: On the one hand, if a mean score of a statement is 3.0 it is indeterminate, above 3 is positive and below 3 is negative. This means that the mean score lies on the high to very high extent side of the continuum.

On the other hand, if a mean score of a statement is below 3.0, the decision is negative. This means that the mean score lies on the low to very low extent side of the continuum.

The stakeholders are of two dimensions- institutional and public populations. The institutional stakeholders are the health workers who are directly responsible for receiving and administering the drugs, equipment and consumables in the hospitals, while the second dimension of the stakeholders- the public population are the enrollees of NHIS scheme who are the end users of the consumption of the equipment, drugs and other consumables supplied under the NHIS scheme. Table 2 below shows the breakdown of the stakeholders who together form the population of this study.

Table 2: Population of Health Workers and NHIS Enrollees across the selected Area Councils and Health care providers in FCT

Area Council	Health care Provider	Health Workers	NHIS Enrollees
AMAC	National Hospital	1369	22,000
	Wuse General Hospital	253	5926
	Nyanya General Hospital	177	8,892
Gwagwalada	UATH	857	30,892
	Gwagwalada Town Hall Clinic (PHC)	27	2,151
Kwali	Kwali General Hospital	99	2685
	Kwali PHC	14	472
Kuje	Kuje General Hospital	126	2533
	Kuje PHC	23	398
	Total	**2,945**	**75,250**

Sources: -*National Hospital (2017)*
-*Wuse General Hospital (2017)*
-*Nyanya General Hospital (2017)*
UATH, (2017)
Gwagwalada Town Hall Clinic (2017)
-*Kwali General Hospital (2017)*
-*Kwali PHC (2017)*
-*Kuje General Hospital (2017)*
-*Kuje PHC (2017)*

The study adopted Taro Yamani's formula and proportional sampling technique to determine the sample size of the respondents. This allowed for fair representation of the population. The details are presented below:

Determination of Sample Size of Health Workers based on the total Population of 2,945

Using Taro Yamani (1967)'s formula =

$$n = \frac{N}{1+N(e)^2}$$

Where n = Sample Size
N = Population Size (2,945)
e = Level of Significance (0.05)
I = Constant

Therefore, $n = \frac{2,945}{1+ 2,945\ (0.05)^2}$

$$= \frac{2,945}{1+ 2,945\ (0.0025)^2}$$

$$= \frac{2945}{1+7.362} = \frac{2945}{8.3625} = 352$$

Total Sample Size of all Health Workers = 352

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Determination of Sample Size of Enrollees based on total Population of 75,250

Using TaroYemani's formula =

$$n = \frac{N}{1+N(e)^2}$$

$$= \frac{75,250}{1+ 75,250\ (0.0025)^2}$$

$$= \frac{75,250}{}$$

1+ 188.125

= 75,250 =398
189.125

Total Sample Size of Enrollees = 398

The Study employed purposive sampling technique to choose 4 out of the 6 Area Councils in FCT. These are Abuja Municipal Area Council (AMAC); Gwagwalada; Kwali; and Kuje. In each of these Area Councils, various health institutions were chosen for the study to generate the views of stakeholders. In AMAC, the study chose National Hospital, Wuse General Hospital and

Nyanya General Hospital; in Gwagwalada, University of Abuja Teaching Hospital and Gwagwalada Town Hall Clinic were sampled, while in Kwali, Kwali General Hospitals and Kwali Primary Health Centre (PHC) were chosen; and in Kuje, Kuje General Hospital and Kuje PHC were sampled. Breakdown of the sample size as drawn from population of various units of the study are presented in Table 3 below.

The study also utilized proportional sampling technique to prorate the sample size for each study unit according to the strength of its contribution to the general population of the respondents' category. The formula for this proportional allocation is given as:

$$\frac{SP * SS}{GP}$$

Where SP= Specific Population of a Study Unit
SS= Sample Size of Respondents' Category
GP= General Population of Respondents' Category

Data generated from the questionnaire instrument were analyzed using Version 25 of Statistical Package for Social Science (SPSS) and independent two sample t-test was used to test the hypotheses.

Table 3: Sampled population of Health Workers and NHIS Enrollees across the Selected Area Councils and Health care Providers in FCT

Hypotheses

The study tested the following hypothesis:

H_0: The views of enrollees and health workers do not differ significantly regarding the problems of inadequate equipment, lack of drugs and consumables as hindrances to the effective implementation of NHIS in the FCT.

Data Presentation and Interpretation

Out of the 352 copies of questionnaire distributed to Healthcare workers only 311 copies were retrieved and found usable; and of the 398 copies of the questionnaire distributed to NHIS enrollees, only 361 copies were returned and found usable. Therefore analysis of data is based on the questionnaire retrieved.

Area Council	**Health care Provider**	**Population of Health Workers**	**Sample size of Health Workers** $\frac{SP * SS}{GP}$	**Population of NHIS Enrollees**	**Sample Size of NHIS Enrollees** $\frac{SP * SS}{GP}$
AMAC	National Hospital Wuse General Hospital Nyanya General Hospital	1369 253 177	164 30 21	22,000 5926 8892	116 31 47
Gwagwalada	UATH Gwagalada Town Hall Clinic (PHC)	857 27	102 3	30,193 2,151	160 12
Kwali	Kwali General Hospital Kwali PHC	99 14	12 2	2685 472	14 3
Kuje	Kuje General Hospital Kuje PHC	126 23	15 3	2533 398	13 2
	Total	**2,945**	**352**	**75,250**	**398**

Table 4: Descriptive Analysis of the Extent To Which Inadequate Equipment, Lack Of Drugs And Consumables Affects The Effective Implementation Of NHIS In FCT

S/N	Statement	Category	Response Categories					Total	Mean Score	Decision
			VHE (5)	HE (4)	U (3)	LE (2)	VLE (1)			
1.	Unavailability of medical equipment (such as Drip Stand, surgical instruments, Blood pressure reader, etc) discourages enrollees from making use of health facilities.	**NE** **HW**	208 62	98 81	23 78	20 67	12 23	361 311	4.30 3.29	High extent High extent
2.	Existence of faulty and substandard equipment sometimes hinders enrollees from utilizing the services of health facility.	**NE** **HW**	132 58	162 73	27 32	23 121	17 27	361 311	4.02 3.04	High extent High extent
3.	Essential Consumables (such as syringe and needle, plaster, cotton wool, hand gloves, mentholated spirit etc) are not readily available in the health facility.	**NE** **HW**	117 58	157 64	34 41	37 118	16 30	361 311	3.89 3.00	High extent High extent
4.	Unavailability of some medical consumables forces enrollees to buy them from outside (thereby incurring out-of-pocket expenditure).	**NE** **HW**	144 55	145 67	33 35	34 120	5 34	361 311	4.08 2.96	High extent Low extent
5.	Prescribed drugs contained in the NHIS approved drug list are often times not available in the health facility.	**NE** **HW**	130 64	147 79	37 40	33 106	14 22	361 311	3.96 3.18	High extent High extent
6.	There is the existence of sub-standard drugs in cases where drugs are said to be available.	**NE** **HW**	122 73	153 100	38 25	33 82	15 31	361 311	3.93 3.33	High extent High extent
7.	Lack of prescribed drugs forces enrollees to buy them from outside (thereby incurring out-of-pocket expenditure).	**NE** **HW**	111 64	172 70	35 38	31 101	12 38	361 311	3.93 3.07	High extent High extent
8.	Unavailability of sterilizing equipment discourages enrollees from using the health facility.	**NE** **HW**	124 77	149 88	37 27	34 90	17 29	361 311	3.91 3.30	High extent High extent
9.	Implementation of NHIS has not reduced out-of-pocket expenditure of enrollees.	**NE** **HW**	102 54	176 59	36 39	35 107	12 52	361 311	3.89 2.86	High extent Low extent
10.	Generally, enrollees are not satisfied with the health care services provided by the health facility in terms of equipment, drugs and consumables.	**NE** **HW**	120 58	170 85	36 36	25 96	10 36	361 311	4.01 3.11	High extent High extent
	Grand mean = $\frac{NHIS\ enrollees}{Health\ workers} = \frac{3.99}{3.12} = \frac{High\ extent}{High\ extent}$									

Source: Field Survey, 2018

Table 3 above represents the item by item descriptive analysis of NHIS enrollees and health workers' response to the statements on the extent to which inadequate equipment, lack of drugs and consumables affects effective implementation of NHIS in FCT. The mean score of the items for the two categories of respondents were all greater than 3.0, except the response to items four (mean = 2.96) and nineteen *(mean = 2.86)* of the Health workers that were less than *(mean = 3.0).* The result from table 3 also indicates that the grand mean rating of NHIS enrollees *(mean = 3.99)* was higher than the grand mean rating of the health workers *(mean = 3.25).* Since the grand mean of both categories *(i.e. mean = 3.99 and 3.12)* were greater than 3.0, the result implies that inadequate equipment, lack of drugs and consumables affect the effective implementation of NHIS in FCT to a high extent.

Interpreting the items one after the other, item one shows that to a high extent, the problem of unavailability of medical equipment (such as drip stand, surgical instruments, blood pressure reader, etc)

discourages enrollees from making use of health facilities. The mean scores of 4.30 and 3.29 for NHIS enrollees and health workers respectively support this evidence. Associated with the above is the opinion of both the NHIS enrollees and health workers concerning item two which reveals that, to a high extent, the existence of faulty and substandard equipment sometimes hinders enrollees from utilizing the services of health care facility. This is demonstrated by the mean scores of 4.02 and 3.04 for the NHIS enrollees and health workers respectively. Item three on table 3 above indicates variation in the opinion of NHIS enrollees and health workers on the availability of essential consumables (such as syringe and needle, plaster, cotton wool, hand gloves, methylated spirit etc.). Whereas the NHIS enrollees are saying that the essential consumables are not readily available to a high extent; the health workers are undecided. The mean scores of 3.89 and 3.00 for NHIS enrollees and health workers respectively support this evidence. Also, there is variation in the opinion of NHIS enrollees and health workers on item four which dwell on whether unavailability of some medical consumables forces enrollees to buy them from outside (thereby incurring out-of-pocket expenditure). While the NHIS enrollees agreed that the problem exist to a high extent (mean score = 3.96), the health workers are saying the problem exists to a low extent (mean score = 2.96).

Concerning item five on table 3 above, both the NHIS enrollees and health workers are of the opinion that to a high extent, prescribed drugs contained in the NHIS approved drug list are often times not available in the health facility. The mean scores (NHIS enrollees = 3.96, health workers = 3.18) underscores this evidence. In the same vein on item six, both categories of respondents agreed that to a high extent there is the existence of sub-standard drugs in cases where drugs are said to be available. The mean scores of 3.93 and 3.33 for NHIS enrollees and health workers respectively support this evidence. Also, on item seven both NHIS enrollees and health workers agree that to a high extent, lack of prescribed drugs forces enrollees to buy them from outside (thereby incurring out-of-pocket expenditure). The mean scores of 3.93 and 3.07 for enrollees and health workers respectively support this fact.

Furthermore, with regard to item eight on the table above, both categories of respondents are of the opinion that to a high extent, unavailability of sterilizing equipment discourages enrollees from using the health facility. The mean scores (NHIS enrollees = 3.91, health workers = 3.30) underscores this evidence. Regarding item nine, there exist variation in the opinion of enrollees and the health workers. While the enrollees agreed that, to a high extent, the implementation of NHIS has not reduced out-of-pocked expenditure (mean score = 3.89), the health workers are of the opinion that the problem exist to a low extent (mean score = 2.86). On the whole, concerning item ten, there is an agreement between both categories of respondents that to a high extent, enrollees are not satisfied with the health care services provided by the health facilities in terms of equipment, drugs and consumables. This conclusion is supported by the mean scores of 4.01 and 3.11 for enrollees and health workers respectively.

Test of Hypothesis

To examine the difference in views between NHIS enrollees and health workers regarding the problems of inadequate equipment, lack of drugs and consumables as hindrances to the effective implementation of NHIS, the mean response from the enrollees and health workers in FCT were subjected to a descriptive Statistics and an independent two sample t-test analysis as presented in table 4 below.

Table 5: T- test result on the problems of inadequate equipment, lack of drugs and consumables as hindrances to the effective implementation of NHIS between enrollees and health workers in FCT.

Categories	Total	Mean	Std. deviation	t- test Result	$t_{critical}$	D.F.	P – Value	Confidence Interval	
NHIS enrollees	361	3.99	0.839	-12.06	-1.96	670	0.000	-1.019	-0.734
Health workers	311	3.12	1.045						

The independent two sample t-test analysis result on the problems of inadequate equipment, lack of drugs and consumables as hindrances to the effective implementation of NHIS presented above shows that there exists a significant difference in the views of enrollees *(3.99 ± 0.839)* andhealth workers *(3.12± 1.045)*.

The result also indicates that, there is statistically significant difference between the mean response of NHIS enrollees and health workers as determined by the independent two sample t-test; because $t_{(670)} = -12.06$ was less than the t-critical *=-1.96 and p = .000* was also less than the level of significance = *0.05.* The null hypothesis is therefore rejected and the alternative hypothesis is accepted. This therefore implies that the views of enrollees and health workers differ significantly regarding the problems of inadequate equipment, lack of drugs and consumables as hindrances to the effective implementation of NHIS in FCT.

II. DISCUSSION

The outcome of hypotheses tested using the independent two-sample T-test shows that the views of NHIS enrollees and health workers differ significantly regarding the problems of inadequate equipment, lack of drugs and consumables as hindrance to the effective implementation of NHIS in FCT. For this reason, the null

hypothesis was rejected and the alternate hypothesis accepted. However, even though their views on these issues differ as confirmed by the inferential statistical analysis, the descriptive analysis revealed that their grand mean score (NHIS enrollees = 3.99, health workers = 3.12) are within the threshold that says the problem exists to a "high extent". It, therefore, means that both categories of respondents are of the view that the problems of inadequate equipment, lack of drugs and consumables hinders the effective implementation of NHIS in FCT to a high extent. Nevertheless, since the grand mean score of NHIS enrollees (3.99) is higher than that of health workers (3.12), it means that the extent to which the enrollees perceive the existence of the problem is higher. This naturally, is not out of place because the enrollees are one of the end users of hospital equipment, drugs and other consumables and as such they are better positioned to assess their availability and effectiveness. On this issue, the study established that inadequate medical equipment such as drip stands, surgical instruments, blood pressure reader etc. discourages enrollees from making use of health facilities under NHIS, and also that essential consumables such as syringes and needles, plasters, cotton wool, hand gloves, methylated spirit etc. are not readily available and where they are available, they are sometimes faulty and substandard. The paucity of these health care essentials forces enrollees to buy them from outside (thereby incurring out-of-pocket expenditure).

It was also **reported** that prescribed drugs as contained in the NHIS approved drug list are often times not available in the health facilities and where available, they are sometimes sub-standard; and this forces enrollees to buy them from private outlets, thereby incurring out-of-pocket expenditure. By implication, NHIS has not reduced out-of-pocket expenditure of enrollees in FCT. The incurring of out-of-pocket expenditure by enrollees defeats the very reason for establishing the health insurance scheme which is to provide affordable, accessible and quality healthcare service. On a general note, the study established that enrollees are not satisfied with the health care services provided by the health facilities under NHIS in terms of equipment, drugs and consumables These findings corroborate the observation of (Yohessor, 2004) that inadequate and outdated medical equipment is a serious concern to the smooth operations of the Nigerian health system. Also, Jegede (2014) identified shortage of drugs as a concern in the various health facilities in Nigeria. This view was also buttressed by Adekola (2015) who aver that drug insufficiency and sub-standard product are peculiar problems facing the Nigerian health care system.

III. LIMITATIONS OF THE STUDY

The study concentrated only on the effect of equipment, consumables and drugs on implementation of NHIS in FCT. Similar study can be conducted using any other variables in implementation of NHIS including funding, employees' commitment, staff welfare, public awareness etc.

The study used survey design. The major problem with survey research is that not everyone who receives a survey is likely to answer it, no matter how many times they are reminded or incentives are offered. The study tried to reduce this problem by administering copies of the questionnaire which was employed to generate primary data in excess of the sample actually studied. In addition, the researchers established acquaintance with some members of staff in the health facilities studied who assisted in retrieving completed questionnaires from their colleagues and enrollees.

Furthermore, the study only reports the perception of enrollees and health workers on the availability and quality of equipment and consumables. These perceptions have not been objectively and independently verified.

IV. CONCLUSION

The abiding concern of this study was to interrogate the implementation of NHIS in FCT as it regards to the specific issues of medical equipment, drugs and consumables. Based on the hypotheses tested using T-test statistical tool and the assumption that the views reported by NHIS enrollees and health workers reflect the true situation, the study concludes that the problems of inadequate equipment, lack of drugs and consumables hinder the efficient implementation of NHIS in the FCT; though the views of enrollees and health workers differ significantly regarding these problems. The study, however, discovered that **both enrollees and** health workers report inadequate equipment, substandard or lack of drugs and consumable across the health facilities in the FCT studied. The existence of these problems has rather increased out-of-pocket medical expenditure.

V. RECOMMENDATIONS

On assumption that the views reported by NHIS enrollees and health workers reflect the true situation the study recommends the following:

NHIS should ensure adequate availability of drugs, consumables and medical equipment**:** No health care facility can achieve effective service delivery when there is no adequate medical equipment, drugs and consumables. It is the responsibility of government to ensure that public health facilities especially the primary

and secondary health care centres are properly equipped. Medical supplies should be open for assessment by multiple stakeholders and not an end-to-end encryption between NHIS and Healthcare Providers.

NHIS should ensure the authenticity of products at various dispensaries**:** Only authorized and branded drugs should be allowed in the NHIS accredited health facilities and NHIS approved drugs for enrollees should always be available. A situation whereby, after doctor's prescription, enrollees are told at the pharmacy section of the health care centre that the drugs are not available defeats the principle of health insurance cover. NHIS is tasked to ensure that only properly equipped and manned health facilities are accredited for its enrollees. Secondly, regular oversight and sometimes unscheduled visits should be instituted to monitor and evaluate NHIS designated health care providers to ensure that they abide by stipulated standard practice.

Pursuant to an institutionalized monitoring and evaluation, the NHIS should collaborate with Civil Society Organizations with interest in public health care advocacy to track and monitor the supply of medical products to the various health care institutions and demand for accountability in the use of these products. The involvement of CSO will provide opportunity for the citizens to drive the implementation process

Finally, more studies are needed to objectively access the availability and quality of medical equipment, consumables and drugs in health facilities that provide NHIS services.

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